

REMARKS

Claims 1-3, 5, 7, and 10-13 remain pending in the above-identified application and stand ready for further action on the merits.

Rejection Under 35 U.S.C. § 103(a)

At pages 3-5 of the Office Action, claims 1-3, 5, 7 and 10-12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Rugge '160 (U.S. Patent 5,851,160) in view of Cackett '832 (U.S. Patent 6,425,832), Oonuki '777 (U.S. Patent 5,348,777), Iwata '712 (U.S. Patent 6,695,712) and Stites '020 (U.S. Patent 5,935,020).

Applicants traverse this rejection and respectfully request reconsideration and withdrawal thereof based upon the following comments.

The Present Invention and Its Advantages

The present invention is directed to a wood-type golf club head, and more particularly to a structure of a large-sized wood-type golf club head being capable of improving the direction of ball flight.

As recited in independent claim 1, the golf club head of the present invention includes the following significant features:

[1] a club head volume V of not less than 300 cc; and

[2] a specific relationship between the gravity point distance "C" (mm) and the head volume "V" (cc) (hereinafter the "V-C relationship") shown below:

$$(1) C \leq 0.12 \times V-8 \text{ (equation (1))}$$

$$(4) C \geq 0.12 \times V-20 \text{ (equation (4))}$$

Distinctions over Rugge '160

At page 3 of the Office Action, the Examiner states that Rugge '160 discloses that (1) a head volume of "250 cc or greater" (Column 5, lines 60-63) and (2) a gravity point distance of 27-33 mm (Column 5, lines 25-31), and (3) a center of gravity positioned closer to the shaft axis thereby reducing the moment of inertia about the shaft axis (Column 5, lines 8-30).

However, Rugge '160 fails to disclose or suggest a head volume of not less than 300 cc and the "V-C relationship" of the present invention (see claim 1).

Further, all of the Examples disclosed in Rugge '160 (see Table 1 at Column 7) also fail to satisfy the V-C relationship feature of the present invention. With respect to the gravity point distance "C", the Examples are compared with the present invention in Table I below. In Table I, the "C" value of the present invention is calculated in accordance with equations (1) and (4) of the "V-C relationship" feature for the head volumes of Rugge '160, within the range 235-285 cc, which are all outside of the scope of the present invention. As shown in Table II, each $\Delta 2$ value in Rugge '160, which corresponds to "C", is much larger than that of the present invention.

In comparing Examples 5, 6 and 10 of Rugge '160, in which the volume of each head is 265 cc, the gravity point distance ($\Delta 2$ ="C") in Example 10, i.e. 31.3 mm, is greater than in Examples 5 and 6, i.e. 30.32 mm and 27.46 mm.

Therefore, Rugge '160 fails to recognize any particular relationship between head volume and gravity point distance "C" as in the present invention.

Table I

Rugge'160			Present Invention
Example	Volume("V")(cc)	$\Delta 2(="C")$ (mm)	"C"(mm)
1	235	32.01	8.2-20.2
2	235	29.64	8.2-20.2
3	225	29.89	7-19
4	235	31.12	8.2-20.2
5	265	30.32	11.8-23.8
6	265	27.46	11.8-23.8
7	235	30.71	8.2-20.2
8	250	32.56	10-12
9	235	33.82	8.2-20.2
10	265	31.3	11.8-23.8
11	285	32.1	14.4-26.2
12	285	32.1	14.4-26.2

Distinction over Cackett '832, Oonuki '777, Iwata '712 and Stites '020

These cited references also fail to disclose and suggest the "V-C relationship" of the present invention.

Combination of the Cited References

A *prima facie* case of obviousness is not established even if the cited references are combined, since none of the cited references disclose or suggest the specific structure meeting the "V-C relationship", which is recited in independent claim 1. Likewise, it follows that a person having ordinary skill in the art would not be motivated by any of the teachings of the

cited references to arrive at the structure as instantly recited in pending claim 1, based on the failure of the cited art to teach anything regarding the "V-C relationship".

At page 6, lines 7-9, of the Office Action, the Examiner asserts that the gravity point distance "C" is 16-28 when "V" is 300 cc in accordance with the V-C relationship in the present invention, while Rugge '160 discloses a range of 27-33 mm for the gravity point distance "C" (column 5, lines 25-31). The Examiner appears to rely on the overlap at 27-28 mm in order to reject claims of the present application.

However, the hypothetical range calculated based on Rugge '160 using the equations of the present invention shows that there is only a small overlap with a large majority of the calculated range of Rugge '160 being outside the scope of the V-C relationship of the present invention.

Further, if the V-C relationship of the present invention is hypothetically calculated for a higher head volume of 450 cc based on the dimensions disclosed by Rugge '160, the resulting range is 27-33 mm which fails to overlap at all with the invention V-C range of 34-46 mm ($0.12 \times 450 - 20 = 34$, $0.12 \times 450 - 8 = 46$). This is further evidence that Rugge '160 fails to suggest the V-C relationship.

Further, it is no more than "hindsight" to think the present invention is obvious over the cited references based on such a hypothetical range. To reach a proper determination under 35 U.S.C. § 103, the Examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the Examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time

to that person. Knowledge of Applicants' disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon Applicants' disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. (MPEP 2142)

Unexpected Results

The golf club head of the present invention has advantages in improvement of the direction of ball flight in the "Hitting Test" as shown in FIG. 6 (a) and (b) of the present application.

Rugge '160 fails to recognize or suggest the advantages of the present invention as evidenced by the unexpected results as shown in the FIG. 6 (a) and (b). As shown in the Figures, i.e., Refs. 1 and 2, employing designs outside the scope of the V-C relationship of the present invention causes disadvantageous results, which are the bigger difference from a target, in the Hitting Test described in the specification (see pages 9 and 10 of the instant specification).

Election/Restriction

At page 2 of the Office Action, the Examiner states that claim 13 has been withdrawn from consideration. Applicants respectfully request rejoinder and consideration of claim 13 based on the fact that claim 1, as described above, should be allowable and the process claim (claim 13) depends from the allowable product claim (claim 1). (MPEP §821.04)

CONCLUSION

Based upon the remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of pending claims 1-3, 5, 7 and 10-13 are allowed under the provisions of Title 37 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Andrew D. Meikle (Reg. No. 32,868) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 

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